

# Hobby Kit - NFT 600 - Instructions



page 1/9

## Overview

Thank you for purchasing the Hobby Pro Plus Kit - NFT 600. You can look forward to enjoying the benefits of a very effective hydroponics system.

## Kit Information

Growing indoors using NFT (Nutrient Film Technique) is a simple but incredibly productive method of gardening. Plants are placed in Rockwool cubes and positioned so that their roots can feed from a special channel directly beneath them. This carries a continuous running film of nutrient solution recirculated from the main reservoir. Once the roots are out of the bottom of the cubes the system can safely be operated for 24 hours a day. The NFT method is extremely popular for being low level, low maintenance, low cost and high yielding.

Use of artificial light means your plants will grow faster, give you bigger blooms and yield more. A grow light allows you to create your own private garden for year-round enjoyment. No longer will you be dependent on the seasons when growing your favourite plants. Now you can even harvest in the darkest, coldest depths of winter... imagine that!

Having precise control over your growing environment is fun, easy and rewarding - even someone who possesses limited gardening skills can expect to get excellent results with a little patience and effort.

## Where Can You Garden?

Your NFT 600 Hobby Pro Plus Kit is suitable for gardening in any indoor environment – be it a greenhouse, conservatory, garage, or in the corner of a room or school classroom. Even lofts and wardrobes can be turned into growing areas!

When choosing an area try to give yourself as much headroom as possible to avoid excessive heat build-up at plant level. The minimum floor area recommended for this kit is about 120cm by 240cm. It's similarly important to think about airflow. For example, you may want to consider having a gap or vent in the top and bottom of the growing chamber for air to flow through. This will have the effect of allowing heat to escape from the top of the growing chamber while drawing fresh air from the bottom. The larger the vent holes, the better your results. You can also use an extractor fan to help with air exchange.

Additionally, always make sure your growing chamber is cleaned to start with, as well as after each crop.

## Table of contents

Where Can You Garden?	Page 1
Hanging Your Reflector	Page 2
Setting Up and Running Your Light System	Page 3
Let the Growing Commence: Cuttings or Seeds?	Page 4
Transplanting	Page 6
Setting Up and Running Your Gro-Tank	Page 7
Using Your Nutrients	Page 8
Tips and Recommendations	Page 9

## Kit Contents

1x	600 Watt Budget Lighting System - Budget Reflector - 600 Watt Hobby Control Gear Ballast - 600 Watt Grolux Lamp
1x	Ezi Rollers (Pair)
1x	Eco-Technics Two Light Timer Contractor
1x	Grasslin Mechanical Timer
2x	NFT Gro-Tank 424 System - 2x Gro-Tank 424 Top Tray - 2x Gro-Tank 424 Reservoir - 2x Gro-Tank 424 Correx Cover - 2x Gro-Tank MC320 Water Pump - 2x Gro-Tank Delivery Tube - 2x Spreader Mat 25'
1x	Vita Link Max Grow - 2 Litres
1x	Vita Link Max Bloom - 10 Litres
8x	Total Blackout Sheeting (metre)
1x	pH Down - 250mls
1x	pH Test Kit
32x	7.5cm (3") Grodan Transplanting Cubes
77x	Grodan Large Cuttings Seed Cubes
1x	50ml Clonex
1x	Cloning Scalpel
1x	Hi-Top Medium Unheated Propagator

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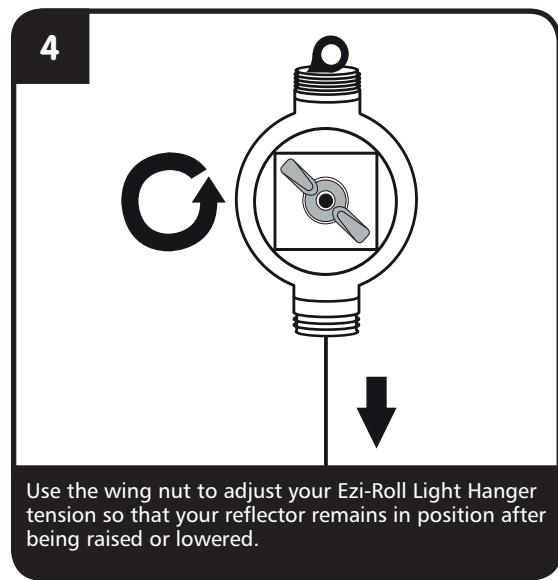
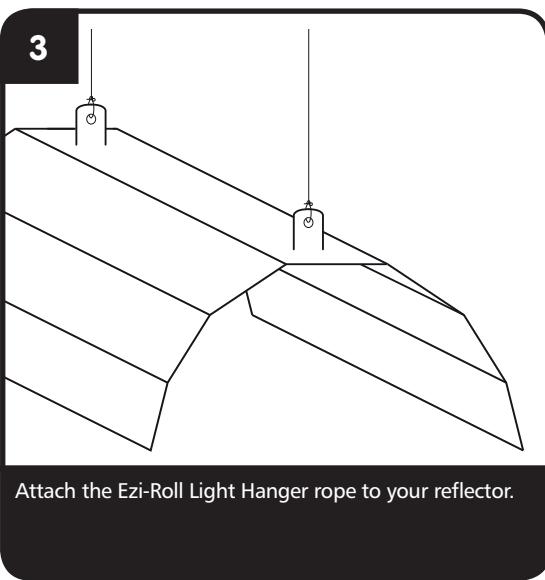
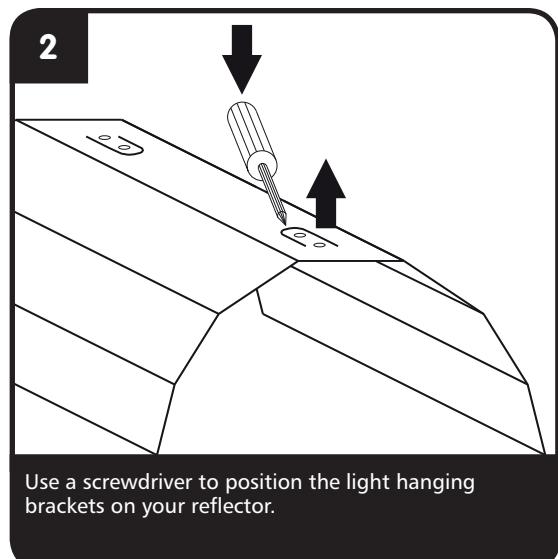
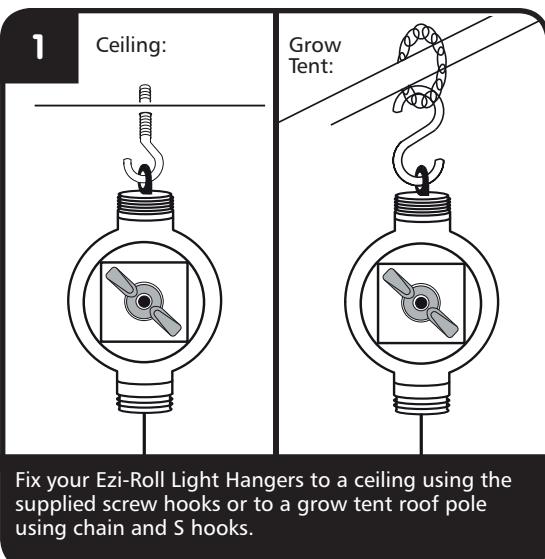
# Hobby Kit - NFT 600 - Instructions

page 2/9

Below are instructions on how to set up your NFT 600 Hobby Pro Plus Kit in areas with no natural daylight, such as a BudBox grow tent or purpose-built grow room/growing chamber. To use your kit in a greenhouse, conservatory or in the classroom you can follow exactly the same principles. Everything will be set up in an identical manner, giving you the basis to easily achieve great results.

## Hanging Your Reflector

Once you have chosen a suitable place for growing the first task will be to hang your reflector. The Ezi-Roll Light Hangers included in your kit save so much time and effort compared to alternatives such as chain, and make it incredibly easy to ensure that your light is always at the optimum height for your plants. Suspend your light reflector from a pair and then adjust the height simply by gently pulling it up or down. To set up your Ezi-Roll Light Hangers refer to the guide below:

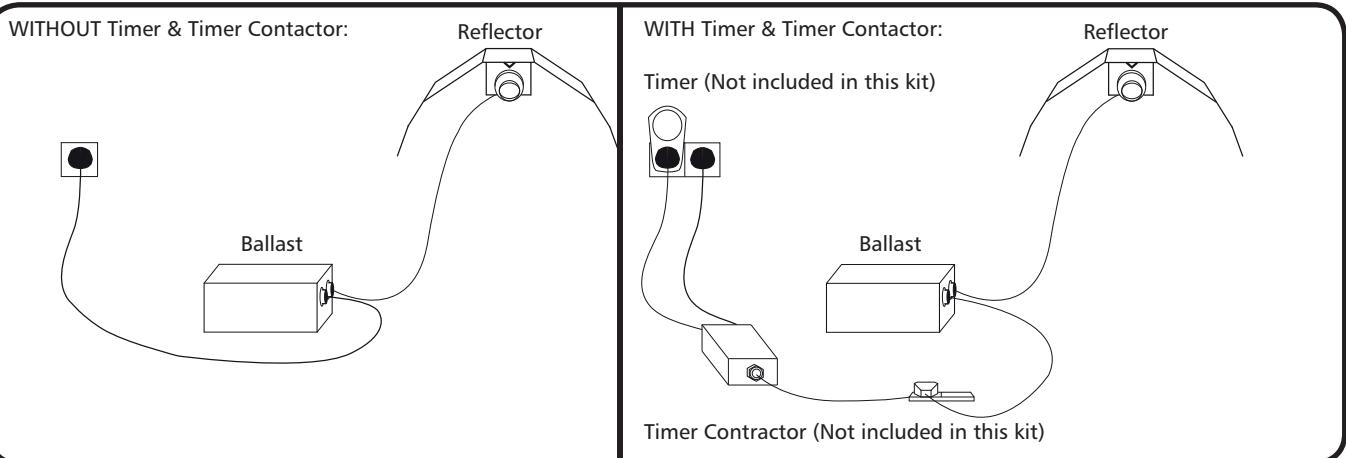


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## Setting Up and Running Your Light System



Your 600 Watt Budget Lighting System is manufactured to the highest standards and is specifically designed with indoor growing in mind. For the intensive cultivation of light loving plants, your 600 Watt light will cover an area of about 120cm x 150cm (4' x 5'), with preferably as much head room (grow room height) as possible. It's OK to grow in an area as small as this although it is more demanding on you and your plants - a small extractor to remove the hot air might prove beneficial in such circumstances. Your 600 Watt light will also cover a larger area than 120cm x 150cm (4' x 5') for medium light gardens or even larger for propagation rooms. Use the Total Blackout sheeting supplied to section off the corner of a room or to line any dark surfaces with. The white surface will reflect light back onto your plants for maximum yield.

With your reflector suspended in place, carefully screw the Grolux lamp into the lampholder making sure of a firm fit. Next plug the lead coming from your reflector into your ballast. If you are not using a timer then plug the power lead coming from the ballast into the mains. However, if you are using a timer (advisable), plug the power lead coming from the ballast into the output socket of a lighting contactor. Then locate the 'input' lead coming from the contactor and plug it into the mains. Next identify the 'Timer' lead coming from the contactor and plug it into a timer. Finally, select when you want the timer to switch on and off by adjusting its settings and afterwards plug this into the mains. You are now in a position to safely switch on the mains.

### Lamp Heights

During propagation and transplanting the 600 Watt light should be 1.5m (5') above your plants, being adjusted when necessary to maintain preferred temperatures. Gradually the light can be moved down, a couple of inches each week. If the plants are growing well after a week or two (maybe a few inches high), then move the light to about 90cm (3') away from the plant tops. The plants need to be strong and healthy – at least 45cm (18") tall - before the light is closer than 60cm (2') away. You probably shouldn't get any closer than this at any stage of growth.

This is a rough guide. Ideal lamp heights will vary depending on the room you are growing in and whether an extraction air exchange system is used. The main concern is preventing excessive heat generated by the lamps from damaging the plants (too hot: look for leaves curling upward at tips and margins, over transpiration and general leaf damage). If your area is getting too warm or humid you may need an extractor fan.

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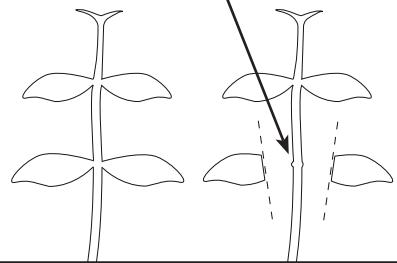
## Let the Growing Commence: Cuttings or Seeds?

### The Growing from Cuttings/Cloning Method

Growing from cuttings allows you to duplicate a particular plant that has already been successful. To do so:

1

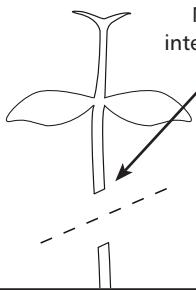
Nodal  
intersection



Find a healthy growing tip and remove the new shoots and leaves about 10cm (4") from the back of the tip.

2

Nodal  
intersection



At the base of this nodal intersection make a clean diagonal cut removing the cutting from the mother plant using a disposable cloning scalpel.

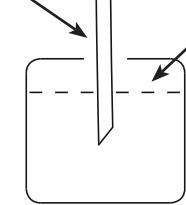
3

CLONEX

Immediately place the cutting in a good rooting gel, such as Clonex, and leave for a minute or two.

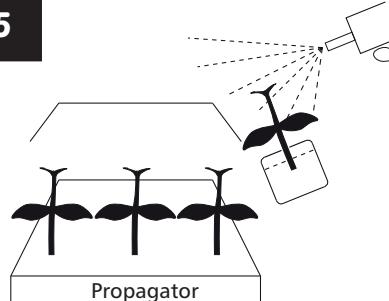
4

Cutting      Cuttings Seed Cube



Pre-soak a cuttings seed cube in a quarter strength solution of Vita Link Grow (1ml of A and 1ml of B to 1 litre of water). Add the feed to the solution then adjust the pH to about 6. If pH is higher, add a drop of pH Down. When totally soaked in this solution, lightly pinch the cube to release some excess moisture. Put the cube onto a tray, then firmly insert your cutting half way into it.

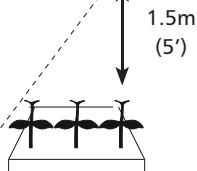
5



Lightly mist the cutting with water and place it in your propagator alongside any other cuttings. These should not be left standing in water but must not be allowed to dry out.

6

600 Watt Grow Light



Place your propagator in your grow chamber with the 600 Watt light about 1.5m (5') above it (NOT directly above as this will damage the plants).

Adjust when necessary to maintain temperatures between 21°C and 26°C (24°C is ideal). Root cuttings under light for 18 to 24 hours. A good humidity level is around 70% to 80% relative humidity.

- Close the vents on the propagator for the first few hours until you see a light misting of moisture on the inside of the lid, then open the vents slightly to maintain these conditions.
- Every other day, lift the lid, wipe any excess moisture off the inside of the lid, mist the plants with water and replace the lid. Adjust the vents as necessary.

Roots will emerge from each Jiffy Plug after 10 to 20 days. The cuttings are now rooted and ready to be transplanted. Now proceed to the section on Transplanting into 7.5 Litre Hydro Pots (page 6).

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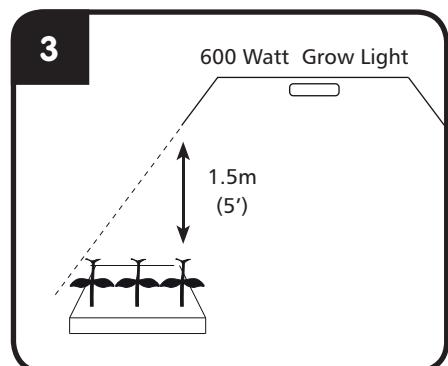
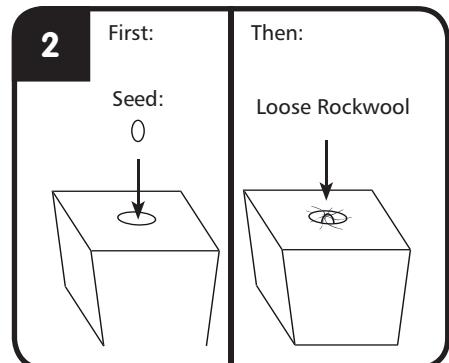
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## The Growing from Seeds Method

It is sometimes a good option to grow from seeds as opposed to cuttings, maybe because you don't have a mother plant or if you are new to indoor growing. To germinate seeds you can either do so on wet tissue and then manually transfer them to Jiffy Plugs or you can start them straight into Jiffy Plugs inside a propagator. Using a propagator will give you more control over temperature and humidity.

### Growing Seeds WITH a Propagator

1. Pre-soak the Grodan Cuttings Seed Cubes in a quarter strength solution of Vita Link Grow (1ml of A and 1ml of B to 1litre of water). First add the feed to the solution then adjust the pH to about 6. If pH is too high add a drop or two of pH Down.
2. Make a hole in the top of the cubes large enough so that each seed will sit loosely below the surface. Drag a few loose strands of rockwool over the top surface of the seeds, hiding them at the top of each cube. Now put them on a tray in the propagator. The cubes should not be left standing in water nor should they be allowed to dry out. Mist the top and sides of the cubes if they start to dry out a little.
3. Place your propagator in your grow chamber with the 600 Watt light about 1.5m (5') above it, adjusting this when necessary to maintain temperatures between 21°C and 26°C (24°C is ideal). You can further protect your propagator from light intensity by moving it out of direct light or even by covering the top with one layer of spreader mat.
4. Close the vents on the propagator for the first few hours until you see a light misting of moisture on the inside of the lid, then open the vents slightly to maintain these conditions.
5. After 2 or 3 days the cracked seed shell on each plant will start to push up and out of the mix on a thin stem. Remove the propagator lid now - it is no longer needed.
6. Roots will emerge from each cube after 10 to 20 days. The plants are now rooted and ready to be transplanted. Proceed to the section on Transplanting into 7.5cm (3") Grodan Transplanting Cubes (page 6).



### Growing Seeds WITHOUT a Propagator

1. Wet several layers of tissue on a saucer with water from a hand sprayer or mister. Make sure there is no excess water in the bottom of the saucer.
2. Place the seeds on the wet tissue, leaving a small gap between them. Then place another saucer on top and move to a warm room or cupboard.
3. The seeds will crack easily using this method. Once the seed shell has cracked open on a plant a small white tap root will emerge from the crack. At this point take the seedling and insert the tap root into the hole in the pre-soaked small cube (soak the cube in quarter strength solution as in the previous method), leaving the shell sitting on the surface of the cube.
4. Put the seedlings under the light (at least 1.2m-1.5m (4'-5') away), the cracked shell for each plant will start to push up and out of the cubes on a thin stem.
5. The shell will then be discarded on each plant. The seedlings can now be transplanted into the 7.5cm (3") Grodan Transplanting Cubes. Proceed to the section on Transplanting (page 6).

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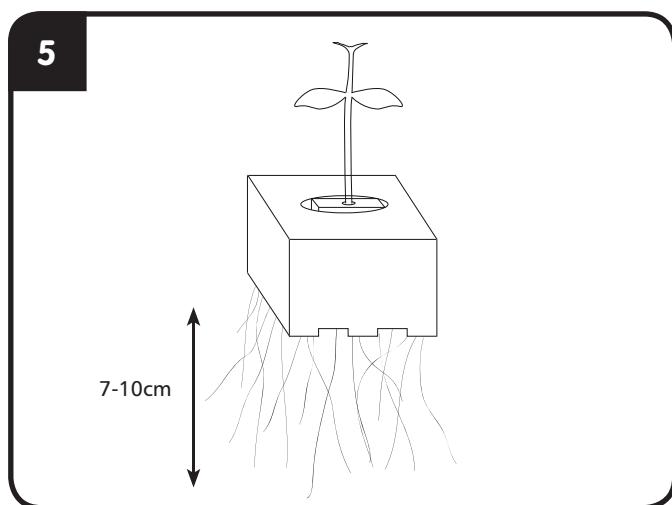
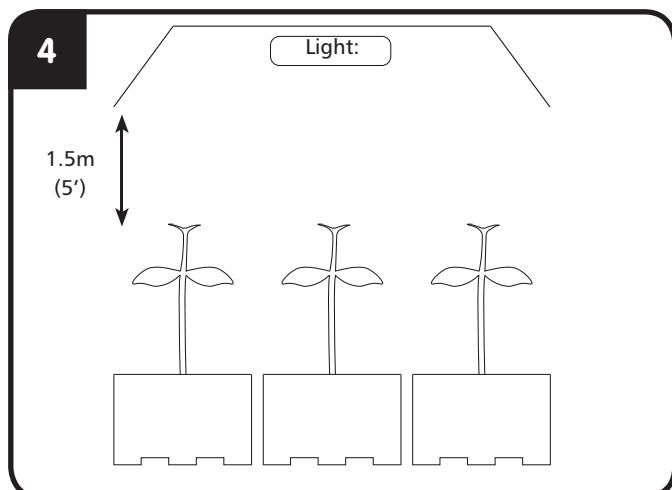
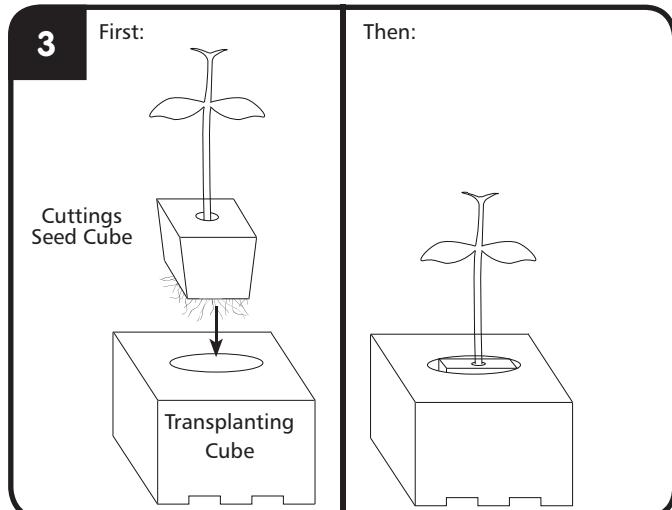
## Transplanting

### Transplanting into 7.5cm (3") Grodan Transplanting Cubes

If you have followed the instructions on the previous page you should currently have some small newly-rooted cuttings or some young seedlings in the Grodan Cuttings Seed Cubes. Now it's time to transplant these small cubes into the 7.5cm (3") Grodan Transplanting Cubes.

All growing methods are the same for seedling or cutting from this point. Simply follow the guide below.

1. Pre-soak the 7.5cm (3") Transplanting Cubes in quarter strength Grow feed (1ml of Grow A and 1ml of Grow B per Litre of water). First add the feed to the water, then adjust the pH of the solution to about 6. If the pH is a little high use a few drops of the pH Down to drop the pH of the nutrient solution. Take the white wrapper off of the cubes.
2. Now your 7.5cm (3") cubes are soaked, lightly pinch the cubes to release a little of the excess moisture, this will help your plantlets root into the cubes faster.
3. Gently insert each of the small cuttings seed cubes into a larger 7.5cm (3") Transplanting cube. Afterwards put the cubes back under the light (usually for a few days until you see roots emerge from the bottom of the 7.5cm (3") cubes). Should the cubes become dry, simply dip each one in a freshly made-up quarter strength nutrient solution and place them back under the light on a tray. You can put the cubes in the Gro-Tank, just don't operate the system until roots of sufficient length emerge from the bottom of the cubes (otherwise this will be detrimental to their growth). The roots need to be long enough to comfortably feed from the NFT channel (at least 7-10cm) before the system should be turned on.
4. The light at this stage should still be about 1.2m-1.5m (4'-5') above plant tops. If the plants stretch a little toward the light, especially with seedlings, prop them up (using folded paper for example) until the stems have hardened off a little and can support their own weight. It is better to prop up the seedlings rather than having the light too close and damaging them. When the plants are big and strong in a month or so the closest you'll probably get your light will be about 60cm away (2'). Until then bring your light down over time in small increments.
5. When you see roots measuring 7-10cm at the bottom of the cubes (it will only take a few days for this to happen) it is time to move the plantlets into the Gro-Tank and run the pump. Instructions on how to set up your tank are on page 7.



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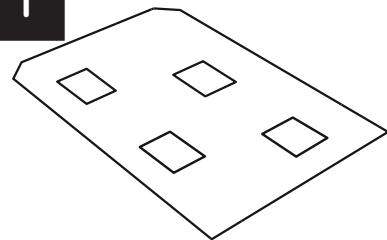
# Hobby Kit - NFT 600 - Instructions

page 7/9

## Setting up and Running the Gro-Tank

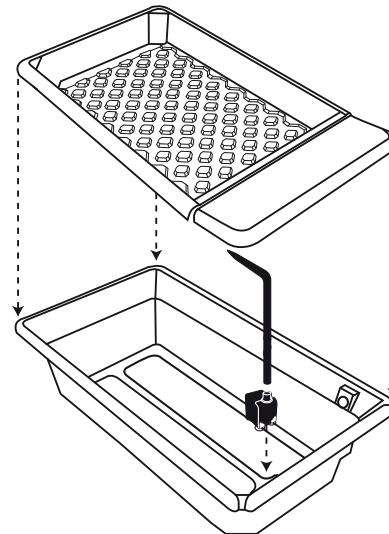
Each NFT Gro-Tank 424 gives you the benefits of fast growth and high yield with minimum waste. A compact design and built-in reservoir lets you make the most of available space, especially in areas with low headroom such as lofts. The following instructions feature the NFT Gro-Tank 205 Gti but the principles are the same:

1



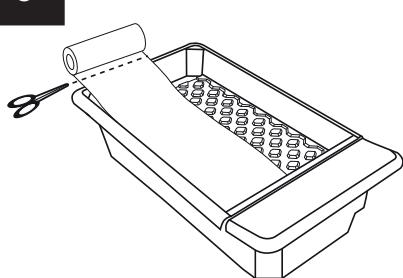
Decide how many plants you are going to plant into your Gro-Tank and cut the right amount of holes in the white correx Gro-Tank cover. Cut the square holes the same size as the Transplanting Cubes.

2



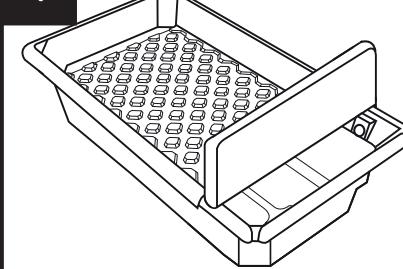
Set up the Gro-Tank by placing the top tray over the tank so that the end of the top tray with the flap is above the end of the tank that has been designed for the pump to sit in. The pump sits at the open end of the reservoir with the delivery pipe placed through the hole on the top tray.

3



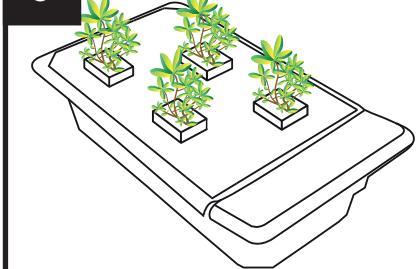
Place a single layer of the spreader mat across the whole of the top tray. This will help to spread the nutrient solution across the whole of the tray where the roots will eventually form.

4



Fill the Gro-Tank with a quarter strength nutrient solution (use 1ml of Grow A and 1ml of B per litre of water). Add the feed first then adjust the pH to about 6.

5



Place the correx over the top tray and then slot the Transplanting Cubes through the cut out holes in the cover, leaving the cubes to rest on the growing tray. Set the pump running. Once the roots show from the bottom of the cube leave the pump running 24 hours a day, 7 days a week.

Your Gro-Tank should now be running with a pH of about 6, a quarter strength grow nutrient solution and the light about 1.5m (5') away from the plant tops. Now the system is running there are only three main things you need to consider and possibly adjust. These are:

- Lamp heights (See page 3)
- Nutrient solution strengths (See page 8)
- Nutrient solution changes (See page 9)

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page 8/9

## Using Your Nutrients

Your kit is supplied with 2 Litres of Vita Link Max Grow and 2 Litres of Vita Link Max Bloom (for Hard Water or Soft Water). The chart below is a guide on how to achieve the best results possible from your plant feed. It also instructs you how and when to supply your plants with a number of other recommended Vita Link products which are not in the kit. You will find that experimenting with different products is necessary to discover what will work to improve the performance of your plants (and what won't!). There's no better place to start your trials than with Vita Link. Try Vita Link Buddy for instance, and you'll see a marked improvement in the size and taste of fruits and flowers - and that's just one of many amazing products waiting to be discovered!



This feed chart is based on a 9 week flowering cycle that is typical of most varieties of chilli, tomato, sweet peppers and squash. For plants requiring a longer flowering cycle, insert extra weeks between weeks 5 & 6 following the week 5 guidelines.

## When using active hydroponics systems

Weeks		-6	-5	-4	-3	-2	-1	1	2	3	4	5	6	7	8	Final Week
Periods		Cuttings & Seedlings		Vegetative Growth				Fruiting/Flowering Growth								
Vita Link Max Grow	A			10-15ml	10-15ml	20ml	20ml									
	B			10-15ml	10-15ml	20ml	20ml									
Vita Link Max Bloom	A							20-25ml	20-25ml	20-30ml	20-30ml	25-30ml	25-30ml	25-30ml	25-30ml	20-25ml
	B							20-25ml	20-25ml	20-30ml	20-30ml	25-30ml	25-30ml	25-30ml	25-30ml	20-25ml
Vita Link Plant Start		20-30ml	30-40ml													
Vita Link Bio-Plus		10ml	10ml	1ml	1ml	1ml	1ml	1ml	1ml	1ml	1ml	1ml	1ml	1ml	1ml	
Vita Link Bio-Pac		50ml per Litre	50ml per Litre	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml	2-3ml
Vita Link Fulvic				20ml	20ml	20ml	20ml	20ml	20ml	20ml	20ml	20ml	20ml	20ml	20ml	20ml
Vita Link Foliar				100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre	100ml per Litre
Vita Link Buddy											8-10ml	8-10ml	8-10ml	8-10ml		
Vita Link Flush *																50ml*

All applications are based on dilution in 10 Litres of water unless otherwise stated

\*Only use Vita Link Flush for the first half of your final week. For the last few days before harvest, use plain water.

Always add feeds first, then adjust the pH of the nutrient solution to between 5.5 and 6.5. The table above should work well as a guide, but feed required can vary depending on species and variety of plant, amount of light, environmental conditions etc.

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## Nutrient Solution Changes

Growers should always change their solutions for a fresh batch once every 1 - 2 weeks. With the smaller Gro-Tanks such as yours it is better to do it at least once a week.

When topping up reservoirs between batches of fresh solution use a quarter strength solution (1ml A and 1ml B per Litre of water). You should use this weak 'top up' solution whatever stage of growth you are at because small plants require weaker feeds and larger plants require more water.

This weaker top up will prevent nutrient solutions from getting too strong between solution changes. (Note: if plants are quite dark green, then use just water when toping up reservoirs).

## Top Tips and Recommendations

### Tips

- Ensure grow room/chamber temperatures do not get too warm during the lights-on cycle.
- Do not use oscillating fans on young plants or if you do keep them on a low setting to avoid wind burn and leaf damage.
- Temperature - Most plant species achieve optimum growth in the temperature range of 21°C to 28°C (71°F to 82°F). Maintaining these temperatures during lights-on is not a problem as your light also provides heat.

However it is important to maintain good lights-off temperature as the fall in temperature can diminish yield and plant performance. You may wish to have your lights-on time at night when the ambient temperature is lower and your lights-off time in the day when the ambient temperature is higher. It's often hard to keep temperature down when lights are on. As long as the plants look healthy and are growing every day, don't worry if your growing area seems warm - in summer it's hard to avoid.

- Always measure air temperature in the shade, away from the light.
- Humidity - The ideal for most plant species is around 50% although your plants should perform and stay healthy as long as you stay between 40% and 80% relative humidity.
- Feed strength will vary from environment to environment and from plant to plant therefore the above information should be used as a general guide. Signs of under- and over-feeding are outlined below. If you see these symptoms you should increase or decrease the feed strength accordingly.
- Overfeeding (symptoms) - The first signs are the leaves going from a shiny green to a dull dark green with possible leaf tip burn. The main indication will be the leaf tips hooked or curled downward. Nutrient deficiencies and leaf damage will follow. Remedy - reduce feed strength.
- Underfeeding (symptoms) – The plant will generally lighten in colour all over. Many of the big shade leaves lose their colour. There is no leaf curl with this condition. Remedy- increase feed strength slightly. Hopefully the information in these instructions has been of use to you. If you are unsure about something and have a question that needs answering please give the GroWell technical team a call on **0845 345 5176** - it's free and friendly!

### Recommended Extras

<b>0119</b>	Oxy-Plus 250mls	<b>£3.25</b>
<b>5555</b>	Canna PK 13/14 250mls	<b>£4.99</b>
<b>1101</b>	Canna Boost Accelerator 250mls	<b>£18.99</b>
<b>2000</b>	Cannazym 250mls	<b>£5.99</b>
<b>1736</b>	Vita Link Buddy 250mls	<b>£3.95</b>
<b>0121</b>	Bluelab (NZH) Nutrient Truncheon (cF)	<b>£59.00</b>
<b>0179</b>	Heavy Duty Hydor Nutrient Heater 50 Watt	<b>£23.99</b>
<b>1808</b>	7.5cm (3") Cube Cap (each)	<b>£0.99</b>

Happy gardening!

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